

കേരള സർക്കാർ
Government of Kerala
2014



Regn. No. KERBIL/2012/45073
dated 5-9-2012 with RNI

Reg. No. KL/TV(N)/634/2012-14

കേരള ഗസറ്റ് KERALA GAZETTE

അയികാരികമായി പ്രസിദ്ധീപ്പിച്ചതുന്ത്
PUBLISHED BY AUTHORITY

**2014 ജൂൺ 24
24th June 2014**

**1189 മിതുനം 10
10th Mithunam 1189**

**1936 ആഷ്ടാഡ 3
3rd Ashadha 1936**

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PART III

Stores Purchase

Fire & Rescue Services Department

ലാലു ഭർജ്ജാന് പരമ്യം

[നമ്പുഡ്-02/2014-15]

നമ്പർ എം.1-5465/2014-1.

2014 ମେସି 22.

கேரள முயற் அற்று என்கியு ஸம்பா ஸஸ் வகுப்பிலேக்க பதினார் ஏண் போர்டுவில் ஜனரேஷன் ஹாஸ்பீக்கேர் செழுங்கிலேக்காயி தால்பரமுதூநிவரின்கிளாங் முடிவைச் சுற்று சுக்கல் 2/2014-15 நவராயி கஷனிச்சு கொல்லுங் மேற்பட்டி சுற்று ஸிரீ விஶ்வாயிவராஜர் சுற்று ஸிரீ செனாதாபு லலிக்குந தான். அநக்குறுக்க 10 லக்ஷ. நிதான்வட்டம் 1%.

അസ്സിൽ ദർശാവാൻ ഫോറത്തിന്റെ വില 1,500 + 5% മുല്യാധിക്കർത്ത നികുതിയും ഈ ഓഫീസിൽ ഒക്കേണ്ടതാണ്. ഡ്യൂപ്പി കേരൾ ദർശാവാൻ ഫോറത്തിന്റെ വില 750 + 5% മുല്യാധിക്കർത്ത നികുതിയും ഒക്കേണ്ടതാണ്. ടെണ്ടർ ഫോറത്തിന്റെ വില യാതൊരു കാരണം വശാലും മടക്കി കൊടുക്കുന്നതല്ല. ടെണ്ടർ ഫോറത്തിന്റെ വിൽപ്പന 2-7-2014, 5 മണിയ്ക്ക് അവസാനിക്കുന്നതാണ്. നിശ്ചിത ഫോറത്തിലുള്ള ദർശാവസുകൾ 3-7-2014, 5 മണിക്ക് മുമ്പായി ഈ ഓഫീസിൽ ലഭിക്കേണ്ടതാണ്. പ്രസ്തുത തീയതിക്കുണ്ടെങ്കിൽ ലഭിക്കുന്ന ദർശാവസുകൾ യാതൊരു കാരണവശാലും പരിഗണിക്കുന്നതല്ല. 4-7-2014, 11 മണിക്ക് ദർശാവസുകാരും ടെണ്ടേം അവരുടെ അംഗീകാരത്തിൽ പ്രതിനിധികളുടെയോ സാന്നിധ്യത്തിൽവച്ച് ദർശാവസുകൾ തുറക്കുന്നതായിരിക്കും. ദർശാവാൻ ഫോറങ്ങൾ ഏകമാറ്റം ചെയ്യാൻ പാടില്ല. വില നിരക്ക് പ്രാബല്യത്തിലിരിക്കുന്ന തീയതി 31-3-2015. ഈ

ദൽഹാസിരെ സംബന്ധിച്ച വിശദവിവരങ്ങൾ, വ്യവസ്ഥകൾ, ദൽഹാസ് ഫോറങ്ങൾ മുതലായവ കമാണ്ടേഴ്സ് ജനറൽ, ഫോറംഗാർഡ് സ്, സിവിൽ ഡിപ്പൻസ് ഫയൽ ആഎസ് റിസ്ക്യൂസ്റ്റീസിസ്, കേരള ഹാസിംഗ് ബോർഡ് ജാൻഷൻ, പ്ലാറ്റിംഗ് പി.എ., തിരുവനന്തപുരം-695 001 എന്ന ഓഫീസറുടെ ഓഫീസിൽനിന്ന് എല്ലാ പ്രവൃത്തി ദിവസങ്ങളിലും വൈകുന്നേരം 5 മണിവരെ ലഭിക്കുന്നതാണ്. ദൽഹാസിരേ വില താതാരു കാരണം വശാലും പോസ്റ്റൽ ഓർഡർ, പോസ്റ്റ് റൂഡാപ്, ചെക്ക്, ബാങ്ക് ഡാഫ്റ്റ് എന്നിവയായി സ്റ്റീക്കിൽക്കുന്നതലും.

No. F1-5465/2014-2.

22nd May 2014.

Sealed tenders are invited for fabrication of 16 Nos. of Portable Generators to the Fire and Rescue Services Department. Details of items can be had along with tender forms. The tenders are to reach the undersigned before 3-7-2014 at 5 p. m.

The tenders should be superscribed as Tender No. 02/2014-15, and addressed to the Commandant General, Home Guards, Civil Defence and Fire & Rescue Services Headquarters, Housing Board Junction, Thiruvananthapuram-1. Late tenders will not be accepted. The tenders will be opened at 11 a. m. on 4-7-2014 in the presence of such tenderers or their authorized representatives who may be present at that time. Estimate Cost ` 10 lakhs. EMD 1% date upto which rates are to be firm on 31-3-2015.

Indenting tenderers may on application to the Commandant General obtain requisite tender forms on which tender should be submitted. Application for the tender forms should be accompanied by the cash remittance/money order of ` 1,500 + 5% VAT (Round to next Rupee) per copy which is the price fixed by Government and is not refundable under any circumstances. The tender forms are not transferable. The sale of tender forms will be closed at 3 p. m. on 2-7-2014. Neither Cheques, Bank Drafts, Postal Orders, Postage Stamps etc. will be accepted towards the cost of tender forms, nor will the tender forms be sent per value payable post. Duplicate tender forms if required will be supplied at ` 750 + 5% VAT per copy. The tenders are to read the general conditions given in the tender forms carefully before the forms are filled up.

Kerala stamp paper will be supplied to firms outside State if required by a separate cash remittance of ` 130 Money Order.

Specification for the Fabrication of Generator set with Search Light

1. The frame work for supporting the Generator Set should be G. I type square tube and be able to carry the Portable Generator set Model Honda EU 65.
2. 4 Nos. of power enclosure type plugs on the panel board.
3. Panel board should be completely water proof. Two lights should be having 1000 watts and the other two lights of 500 watts each and each light should have minimum 50 mtr. wire reel for extension.
4. Isolators of 40 Amp with 2 pole are required in the panel board.
5. Ordinary type Ammeter and separate indicators for power plugs.
6. LED Halogen bulb should be branded (Philips, Havell's, Crompton Greaves etc.).
7. Wire used in the reel should be 3 core 4 square mm and enclosure type socket required.
8. On/off switch for each power plugs.
9. Additional wire reel of minimum 50 mtr. length.
10. Two folding type handles with 60 cm each with handle grips.
11. A separate portable stand with a height of 5 feet for holding the light system from ground level.
12. Each light should be detachable from the stand.
13. Screws fitted should be 'butterfly' type.
14. Two solid type rubber wheels should be provided at the front and supporting stay on either rear side of the set.

15. The whole generator set including lights should be detachable from the frame.

16. A rail of length 9 feet should be provided and the slot in the rails should be suitable for the wheel.

CONDITIONS

- | | |
|-----------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------|
| 1. Whether samples are — | Pamphlets, Photograph etc. if any should be forwarded along with the tender. |
| 2. Period with in which — goods should be delivered | Within 60 days from receipt of supply order |
| 3. Rates should be quoted — for the delivery including transporting charge of the items to Kerala Fire and Rescue Services Headquarters | F.O.R., Thiruvananthapuram |
| 4. Payment — | 90% payment against delivery at Thiruvananthapuram in good condition |
| 5. Other special condition — | A guarantee of 12 months from the delivery of item. |

Office of the Commandant General,
Home Guards, Civil Defence,
Fire and Rescue Services,
Housing Board Junction,
Thiruvananthapuram-695 001. (Sd.)
Commandant General.

e-TENDER NOTICE

No. F1-4971/2013/KFRS-2.

20th May 2014.

e-Tenders in two cover system are invited from competent dealers for the fabrication of 83 Nos. of Water tender with respective Specifications to Fire and Rescue Service Department. The tender is to be submitted as e-tenders through <https://etenders.kerala.gov.in>. Since this is an e-tender, only those bidders who have enrolled in the above portal with their own digital signature certificate (DSC) can participate in the tender.

e-Tender document and other details can be obtained from the above e-portal.

The tender has two parts.

1. Technical bid.
2. Financial bid (BOQ).

Tender No. with PAC—KFRS/E-Tender No. 01/2014-15
` 1494 Lakh.

Closing date and time of e-tender—7-7-2014, 5 p. m

Last date and time of receipt of e-tender—7-7-2014, 5 p. m.

Date and time of opening of e-tender.

1. Technical bid—11-7-2014, 11 a.m.
2. Financial bid—13-7-2014, 11 a.m.

Cost of e-Tender (online submission)— 25,000 + VAT @ 5%.

Date upto which the rates are to remain firm for acceptance—31-3-2015.

EMD—1% of PAC in online payment.

Security Deposit—5% of total contract amount inclusive of EMD to be furnished as online payment.

Period of supply—Within 120 days of receipt of supply order.

The bidder desiring to take part in the bid shall log into <https://etenders.kerala.gov.in>. and then select tender and initiate payment. Bidders will be directed to the payment gateway page of the State Bank of Travancore. There are two options-State Bank of Travancore (SBT)— Net banking payment, payment through NEFT from other banks to the payment gateway of SBT.

For obtaining digital signature certificate (DSC) and necessary portal enrolment bidders can visit the website <https://etenders.kerala.gov.in>.

Tenders will be opened in the online presence of such tenderers or their authorized representatives who have logged in at the prescribed time of opening technical & financial bids. If the date fixed for opening happens to be a holiday/due to net failure the tenders will be opened in the next working day, at the same time.

The price of the e-tender form shall be received only through online payment—SBT/SBT NEFT.

The cost should be quoted in Indian currency only.

The tender has two covers:

- * Technical Cover
- * Financial Cover

The First cover ie: the technical cover shall be uploaded with the following document.

1. Scanned copy of complied specification of the product intended to supply.
2. Scanned copy of the agreement in the prescribed formate in Kerala Stamp Paper worth ` 100.
3. Brochure of the product intended to supply.
4. Work experience certificate or other relevant details.
5. Scanned copies of the declaration by the bidder on Kerala Stamp Paper worth ` 100 to the effect that he/his partner /s or any of his directors is not involved in any Vigilance Case registered in connection with any supply made to this Department.

Soon on opening the technical bid of e-tenders the committee constituted to evaluate the technical aspects of the instrument will meet and scrutinize the technical specification of the instrument submitted with the e-tender.

The financial bid belonging to those dealers/suppliers who qualified the technical bid of the instrument required by Kerala Fire & Rescue Services Department alone will be considered.

On Finalization of the same, the second cover ie. the financial bid of the concerned competent firm will be opened for consideration.

The originals of Complied Technical Specification, agreement in stamp paper worth ` 100 Declaration in Stamp Paper worth ` 100 and the item intended to supply shall be produced before the undersigned soon after the Financial Bid opening.

After opening the financial bid, financial evaluation is made only after consultation with the DPC and the decision of the DPC shall be final and be uploaded in the financial evaluation field of the e-tender site whether the tender is financially admitted or not and thereafter the awarding of the contract.

The committee headed by the Commandant General, Kerala Fire & Rescue Services Department will scrutinize the tenders received and will recommend suitably. The decision of the Commandant General will be final for the award of the contract.

The right of acceptance or rejection of e-tender without assigning any reason is solemnly vested with Commandant General, Kerala Fire and Rescue Services.

The rules and regulations prescribed for e-tenders by the Government of Kerala shall be applicable to this e-tender also.

Details with respect to the e-tender and the details of specifications of the item to be purchase can be obtained from the e-tender website <https://etenders.kerala.gov.in>.

Any legal disputes that may arise in relation to the e-tender formalities will be restricted to the jurisdiction of Thiruvananthapuram District Court.

CONDITIONS

1. Whether samples are essential : Pamphlets, photograph, drawing etc., should be forwarded along with the tender.
2. Period with in which goods should be delivered : Within 120 days from receipt of chassis.
3. Rates should be quoted for the delivery of all taxes excluding transportation charge to and fro will be quoted separately
4. Payment : 90% Payment against delivery at Thiruvananthapuram in good condition.

5. Other Special Conditions:(1) A guarantee of 12 months from the delivery of the item
- (2) EMD 1% of PAC in online payment
- (3) Security Deposit 5% of total contract amount inclusive of EMD to be furnished as online payment as mentioned in the Notice inviting e-Tender.
- (4) Any firm whose proprietor, Partner or Director is involved in a Vigilance Case registered in connection with a supply made to this Department earlier shall be barred from participating in this tender.
- (5) The tenderer should be produce latest Solvency Certificate of ` 5 crores or more and should have an average annual turnover of ` 30 crores for the last 3 years.
- (6) Necessary balance sheet / Auditor's Certificate showing the turnover should be produced along with the e-Tender.
- (7) They should also produce the latest VAT clearance and latest Income Tax return copies.
- (8) On receipt of the Supply Order, the tenderer should be provide Insurance cover for the Kerala Government property for minimum ` 5 crores for the fire and theft.
- (9) The fabricator's establishment should be ISO certified and the latest certificate should be furnished along with the e-Tender.
- (10) Canvassing in any manner at any time shall disqualify of the tenderer.
- (11) The undersigned retains the right to increase or decrease the number of chassis for fabrication by 60% if necessary. In other words, the number of chassis may vary from 33 to 133.

Technical Specification for Water Tender

1. *Chassis:*—The fabrication of water tender shall be done on cowl chassis No. 1616i1 by Asok Leyland supplied by Kerala Fire and Rescue Services.
2. *General:*— The appliance shall carry a water tank having a capacity of 4500 litres (Four thousand five hundred liters) of water fitted with a pump at the rear of the appliance driven through PTO having performance as indicated in clause 5 & 6.

The fabrication shall be done so as to meet all the provisions of this document.
3. *Material Selection and Treatment*
 - 3 (a) The choice of materials to be used in fabrication of the appliance shall be made with a view to combine lightness, strength and durability.
 - (b) Timber shall not be used for body construction.
 - (c) All parts which forms the water ways shall be of corrosion resistant material. All metal pipes/ formed section shall be galvanized iron in construction and shall be at least being of medium duty and duly ISI marked. All other metal parts exposed to atmosphere shall be made of corrosion resistant material.
4. *Tank:*—A single water tank of 4500 litres (Four thousand five hundred litres) water capacity shall be mounted on the chassis. It shall be of welded construction and fabricated out of stainless steel sheet 304 bearing ISI Marking having a thickness of 4 mm. Suitable baffles will be provided, in both directions to prevent surge, with stainless steel sheet 304 bearing ISI marking having a thickness of 3 mm. The baffles shall be bolted panel type and bolting shall be done with stainless steel bolts and nuts. It shall be mounted in a manner to keep the centre of gravity as low as possible and also to make the full content

of water in the tank to flow towards the pump. Also the tank shall be mounted on flexible mounting to prevent tank distortion due to the chassis flexion. The shape of the tank shall be of rectangular with convex top and bottom.

4. (a) Suitable lifting eyes will be provided on the shell of the tank to enable the tank to be lifted off the vehicle for repairs etc. The bottom of the hooks will be further strengthened with flange type plates mounted on the top of the tank to avoid any damage to the tank during the process of lifting off the tank.

(b) The tank shall be fitted with a manhole of 450 mm dia. on the top of the tank. The cover of the manhole shall be bolted type. A drain pipe shall be provided and it shall not be less than 50mm dia. through out and shall be taken down to the point well below the chassis without reducing the effective ground clearance and shall discharge away from the wheel. It shall be fitted with drain ball valve of Gun Metal in construction.

4. (c) One overflow pipe not less than 100mm dia. shall be fitted to the tank and taken to the point well below the chassis without reducing the effective ground clearance when fully loaded. The pipe shall be so arranged that the water will overflow while refilling the tank and that no water shall over flow when the appliance is in motion.

4. (d) Two filling pipes (Hydrant connection) of 65mm dia. and with 63mm dia. Gun Metal male instantaneous coupling with strainer shall be fitted to the tank so as to discharge water to the tank from rear top side. This connection shall be fitted with NRV to prevent water leaking through the filling pipes.

(e) The plumbing between the tank and the pump shall have clear and unobstructed water way of not less than 100 mm dia.

(f) Suitable arrangement with gate valve shall be provided for self filling the water tank directly from the pump.

4. (g) The water tank with all its fitments shall withstand hydraulic test pressure of 3 kgf/cm² without any leakage and deformation.

(h) All plumbing shall be reasonably accessible for maintenance purpose. Screwed bends, sharp flanges and joints shall be avoided as far as possible.

4 (i) Suitable arrangements using channel/turf shall be provided on the top of water tank (all along the length) for channelizing the spilled water to the rear of the tank and thereafter to the ground using suitable pipes.

5. Power take off

The power take off unit shall be capable of transmitting adequate engine power to the pump through the propeller shaft. The power take off unit shall be indigenous make suitable to discharge 2200 LPM at 7kg/cm² pressure. The PTO shall match with the pump in this specification.

5.(a) The caulation statement of PTO shall be submitted before mounting the same on the chassis.

5.(b) The engage lever of PTO shall be provided in the Drivers cabin.

5. (c) The fabricator shall submit proof of purchasing a brand new PTO unit.

6. Centrifugal Fire Pump

The pump shall be of single stage centrifugal fire pump with an output capacity of 2200 LPM (Two thousand Two hundred LPM) at a pressure of 7kg/cm². It shall be capable of priming at a depth from 7.00 mtrs at NTP (after considering the allowance) as per IS 950-1980 within 24 seconds with following material data.

(a) Pump body	—	Gun metal (IS 318 Gr.II)
(b) Pump Shaft	—	Stainless Steel conforming to IS 6603/1972
(c) Impeller	—	High Quality Bronze and dynamically balanced.
(d) Neck ring	—	High quality Bronze (Renewable)
(e) Gland	—	Adjustable
(f) Bearing	—	Anti friction and External casing type
(g) Suction inlet	—	Standard 100mm with round threaded hose connection with removable type internal strainer and blank cap.
(h) Delivery Outlet	—	2 nos. of 63mm dia. with instantaneous female Gun metal quick release couplings as per IS 903/75. Each outlet shall be fitted with quick closing screw down type valve with blank cap with pressure relieving system between the valve and cap assembly.
(i) Drain Cock	—	It shall be provided at the bottom of pump casing for draining water in the pump body.

- (j) Cooling System — An indirect cooling system, open circuit type should be provided for cooling the radiator water of the engine. The cooling pipe should be of copper from pump to radiator.

7. Primer - The Primer shall be conforming to IS 951/1987.

It shall be reciprocating priming system matching both to the chassis and prime mover and capable of priming at a depth of 3 meters within 12 to 20 seconds.

7. (a) The reciprocating pistons should be made up of stainless steel (in investment casting) and reciprocating in special self-lubricated linear bearing. The cylinder and priming valve housing should be made up of gun metal.
7. (b) Eccentric cam should be fitted on pump main shaft to operate the primer pistons.
7. (c) The pump should be mounted at the rear of the appliance.
7. (d) The pump casing should show no leakage when subjected to a hydraulic pressure of 1.5 times of the shut off pressure or twice the rated Pressure whichever is higher. The fabricator should furnish the relevant certificate in this regard.

8. Body Fabrication — Cross members will be of GI rolled channels of size 75 X 40 mm duty bolted to main chassis frame with tensile bolts with anti-chafe packing. The entire structure should be framed from 2mm thick GI 32 x 32 mm square tube/ formed section and locker sections duly gusseted of joints, to ensure a strong and rigid structure. The inner locker structure should be out of 30mm x 3mm GI rolled angles duly gusseted and strengthened for sturdiness. No M.S Sheets should be used for either body paneling or in the lockers. ‘Sunk-in’ Semi-circular steps should be provided in chequered plate below the front bumper.

9. Body Works/Storage/Cabin

The enclosed accommodation for six people—driver and officer in the front and a crew of 4 people at the rear shall be provided.

9. (a) The driver seat shall be of adjustable type
9. (b) The design of the cab shall be such that it affords maximum possible vision.
9. (c) Two hinged doors shall be provided on each side of the appliance for the easy access to driver and crew. All doors shall open outwards and hung forward. The locking arrangements shall be with double catch striking plate and flush type handles.

9. (d) Non-slip step and grab rails coated with plastic shall be provided to assist the driver and crew to get in and out.
9. (e) All the seats shall be provided with 100 mm thick foam cushion. Grab rail coated with plastic shall also be provided to all the crew members and officer for holding when the vehicle is in motion.
9. (f) All windows shall have safety toughened glasses and all glasses shall be fitted with winding type regulator.
9. (g) Two number of sun visors shall be provided one on each side.
9. (h) The construction of cab shall be such that the roof shall support the weight of two men without damage.
9. (i) One roof light shall be provide in the driver's cabin.
9. (j) Rear view mirrors should be fitted on outside of the cabin on both sides.
9. (k) The entire cabin floor should be covered with 2.5 mm thick aluminium chequered plate. The cabin and locker should be of composite construction with sufficient rigidity, reinforcement and to be kept as light as possible.
9. (l) The entire structure shall be made of 32x32x 2mm square tube of G.I/formed section. Aluminium sheet of 1.6 mm (16 gauge) shall be used for exterior paneling work all over. For the inner walls of lockers 1.25 mm (18 gauge) Aluminium chequered plate and for the floor of the lockers Aluminium chequered plate of 2.5mm thickness shall be used. The exterior paneling on top of the tank shall be made of 2.5 mm thick Aluminium chequered plate sufficient reinforcement.
9. (m) For inspection and maintenance a hatch of removable type shall be provided in the through and through locker for gaining access to PTO.
9. (n) Curved wind screen glasses should be provided for better visibility. The cabin should be paneled externally with aluminium sheet of 1.6mm thickness and internally with non tea sheets.
9. (o) The cabin roof top should be covered fully by 1.60 mm aluminium chequered.
9. (p) A fire bell of 250mm dia should be provided on the rightside top of the cabin and arrangement shall be so made to enable the fireman to ring the bell from inside the cabin.

- 9 (q) There shall be four lockers, two on each side of the chassis at the rear of the appliance for the stowage in addition to a through and through locker adjust behind the crew cabin for the proper stowage of a portable pump and accessories. The lockers shall be of composite construction.

The doors of the lockers shall be hinged type. All the lockers shall be with weather proof and self draining type construction. All lockers shall be provided with internal automatic lighting arrangements with master switch in the cabin. All locker doors shall open outwards and hung forward.

- 9 (r) Ladder gallows should be fitted capable of carrying a 10.5 meters trussed aluminium ladder.
- 9 (s) Suction Hose tunnel shall be provided at suitable location for carrying four numbers of 2.5 meter long 100 mm dia Suction Hoses.

10. rear portion of the appliance

Strong Alumininum grab rail support on top of the appliance, on either side, running from behind the cabin roof top to the rear foot board level of the appliance should be provided. The entire rear portion including foot board should be covered with 2.50mm aluminium chequered plate.

- 10 (a) The control valves should be provided in such a manner that the following operations are possible.

Tank	—	Pump hose reel
Hydrant	—	Pump, hose reel

- 10 (b) All the pipe connections at the rear and near the pump should be such that the minimum ground clearance from the lowest part of all the pipe connections should not be less than 20".

- 10 (c) A flasher light and audio visual cum warning arrangements (90 db output) shall be provided at the driver's cabin and at the rear pump panel when engine temperature exceeds 90°centigrade.

- 10 (d) For mounting on top of the appliance two separate ladders on either side of the pump at the rear side of the appliance with anti-skid round shall be provided.

11. valve

All valves used in the water line shall be of gun metal ball valve with relevant ISI marking.

12. control panel

Apart from the control panel provided by the chassis manufacturer in the drivers cabin (dash

board), there will be another control panel provided near the pump section and delivery at the rear side of the appliance. The pump panel shall be well illuminated. The control panel shall be having the following items.

- (1) Auxiliary throttle control for engine acceleration.
- (2) Pressure gauge 0 To 17.5kg/cm² calibration .
- (3) Compound gauge calibrated 0 to16kg/cm² in black and vacuum from 0 to760 mm of mercury in red.
- (4) Water level indicator near water tank.
- (5) An electrically operated bell to driver's cabin .

13. Accessories

The following accessories/Fittings shall be provided.

- (1) Fire bell—250 mm dia—1 No.
- (2) Blinking Bar light of with White, Blue and Red colours —1 No.
- (3) Fog lamps—2 Nos.
- (4) Search light with 30 mtrs. cable reel —1 No.
- (5) Spot light—1 No.
- (6) Siren of 1 mile rage fitted near the radiator—I No. (The switch of the siren should be provided on the left corner of the dash board very near to the left seat)
- (7) Hose Reel hose. One Hose Reel hose of 30 mm dia with 60 meters length should be provided at the rear of the appliance well above the pump. The hose should be connected with high pressure fog gun. The reel should be fitted with brake or locking device.
- (8) Reverse light—2 Nos.

14. Electrical System

All Electrical wiring should be concealed in nature. All equipment lockers should have individual automatic lights and these could be operated by means of a master switch on the dash board in the driver's cabin. A Blinking emergency light should be provided-on the cabin top as noted in clause 13 (2).

A two tone hooter of 50 watts to be provided in addition to the usual siren of 1 mile range. Two fog lamps should be suitably attached on to the front bumper of the appliance. Reverse light on either side should be fixed suitably at the rear of the appliance inside wire mesh in such a manner to prevent accidental damage by the foot of the fireman while mounting the tank top. A spot light of 50 watts power should be provided at the rear portion of the appliance near the pump. The battery of the vehicle should be properly secured with metal frame on the top, in

an easily accessible position. Wire mesh guards should be provided to the front wind screen glass, side door glasses, headlights and tail lights. These wire mesh guards should be of removable type (to use during emergency only).

15. Fire Fighting Equipment To Be Supplied Along With Water Tender. The Equipments Should Be With Bismarking And Bis Specification Wherever Applicable.

- (1) Synthetic delivery hoses of 63mm diameter (Type A) with Elastomeric coating outside conforming to BIS 6391-bearing IS 636/1998 in 15 meters length fitted with 63 mm gun metal instantaneous male and female delivery hose couplings with copper wire winding. (IS 4927 —1968) —15 Nos.
- (2) Section Hose 100 mm diameter of plastic/PVC with ISI marks—4 Nos.
- (3) Suction wrenches for 100 mm suction couplings (IS 4643—1968)—2 Nos.
- (4) Suction strainer 100mm
- (5) Stainless steel construction (IS 907—1965) —1 No.
- (6) Basket trainer Cylindrical type IS 3582—1966—1 No.
- (7) Branch pipes (IS 903 -1975) with nozzle of 120mm, 160mm, 20mm and 32 mm —4 Nos. (1 each)
- (8) Akron 1628 multifunction nozzle —2 Nos.
- (9) Grease gun—lever type, heavy duty—1 No.
- (10) Double Ended Spanner set of eleven (of varying mm Size)—1 set
- (11) Cutting plier 9" size —1 No.
- (12) Screw Driver 12" size —1 No.
- (13) Screw Driver 6" size —1 No.
- (14) Inspection lamp with 12 feet wire—1 No.
- (15) Aluminium extension ladder (Trussed type) :CE certified 10.5mtr. (IS 9571-1977) length with Reflective tape on heel, head and string —1 No.
- (16) Diffuser Branch — 2 Nos.
- (17) Wheel stopper block — 4 Nos.
- (18) ABC type Fire Extinguisher (Gas Cartridge Type) with ISI marking- 6 kgs each-3 Nos.
- (19) Carbon Dioxide fire Extinguisher with ISI marking — 4.5 kgs each —2 Nos.
- (20) Polypropelene Rope —25 mm dia— 30 meters—1 No.
- (21) Polypropelene Rope—12.5 mm dia—20 meters—1 No.
- (22) Heavy Duty Rubber Gloves —2 Pair.

(23) Ceiling Hook —1 No.

(24) Crow Bar—6 feet—2 Nos.

(25) Shovel, Pick-axe and Spade —1 No. each

(26) Fireman Axe — 2 Nos.

(27) Sledge Hammer —1 Kg. —1 No.

(28) Bill Book —1 No.

16. Workmanship And Finish

All parts of the appliance shall be of good workmanship and shall be stream line finish. All mechanical and other parts shall be such that parts normally required to be replaced shall be of standard Type and locally available and fit correctly.

If air has to taken for any fittings, It should be taken only from the specific ports in the drier cum distribution unit (DDU) provided by the chassis manufacturer. Drilling holes in the chassis should not be done. Necessary anti corrosion and primer coat in pink colour shall be applied before painting in order to achieve gloss finish. The appliance will be painted with Post Office Red with letters in Yellow. The under chassis shall be painted in black. The inside locker and cabin shall be painted light green.

Fire service insignia shall be painted on both side of the appliance and lettering KERALA FIRE AND RESCUE SERVICES BOTH IN MALAYALAM & ENGLISH shall be done on the vehicle in Yellow color.

17. Instruction Book

Three sets of following literature shall be supplied.

- (a) User's book with illustration both for operating and normal maintenance procedure of the appliance.
- (b) Workshop repair manual
- (c) Illustrated part identification list.

18. Inspection

Inspection of the Water Tender will be conducted in three stages. Quality assurance plan along with load distribution statement on each axle shall be made available with department for approval before 1st stage inspection itself. The calculation of PTO shall also submitted before mounting the same to chassis. Make list for Water Tender is to be submitted well in advance. The load distribution on the chassis should be done according to the chassis manufacturer's specification.

(a) 1st stage inspection

The material identification, dimension checking and quality assurance will be done during the 1st stage inspection. All the materials proposed for the application shall be made available by the fabricator during the 1st stage inspection.

(b) *2nd Stage inspection*

After completion of the basic framework water tank ready, but not mounted, pump ready, but not mounted and structural work shall be inspected during this stage.

The pump casing and impeller shall be subject to hydraulic test as specified in clause 7.d.

Hydraulic testing of water tank will also be done during 2nd stage inspection. Any suggestions/modifications suggested during stage inspections and also at the time of final inspection a part from the specification laid down above must be incorporated at the time of final delivery/acceptance.

(c) *Final stage inspection*

Testing of pumps and appliance shall be done during this stage inspection.

19. Acceptance Tests/ Testing Facilities

The following test shall be carried out before accepting the vehicle. These shall be carried out at the manufacturer's work site. All material required during the acceptance test will be provided by the manufacturer.

(a) The front axle, rear axle and total weight of the loaded appliance shall be checked and the same should not exceed the chassis manufacturer specifications.

(b) The pump shall be run for a period of 4 hours (non-stop) to check the rated output at varying pressure as per clause 6. The output shall be checked using "V" notch method/flow meter. The engine shall show no sign of distress during test.

(c) PRIMER TEST: The priming system shall be tested for the requirement as laid down in clause 7. This shall be carried out immediately after the pump out put test.

(d) The fabricated vehicle shall meet all the regulations with respect to motor vehicle Act/ R.T.O. Regulation enforcement.

20. Manufacturer's Guarantee Certificate

The body manufacturer shall furnish a guarantee for the material, workmanship and performance of the appliance for a period of 3 years from the date of receipt of appliances from the fabricator after acceptance test.

The body manufacturer shall be responsible for replacing of parts free of charges which may become unserviceable during the above period due to substandard material/bad workmanship etc.

The Propeller shaft for PTO shall be procured only from the agencies approved by the chassis manufacturer and shall be got certified by the appropriate agency.

Fire & Rescue Services
Headquarters,
Housing Board Junction, (Sd.)
Thiruvananthapuram-695 001. Director (Administration)
Phone: 0471-2320872. For Commandant General.